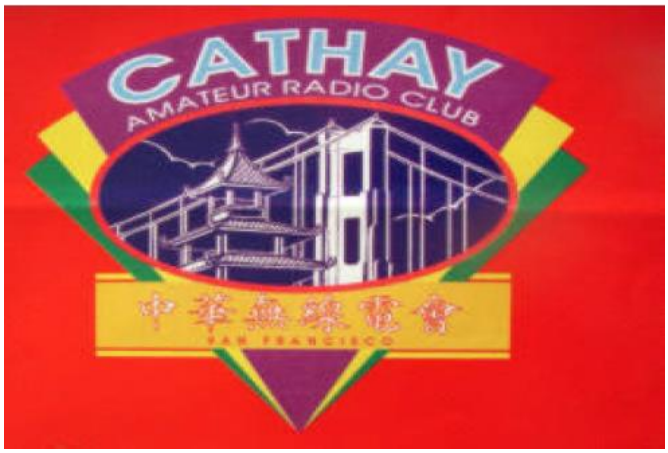

Cathay February 2019

www.cathayradio.org

President: George Chong, W6BUR **email:** *W6BUR@comcast.net*
Vice President North: Leonard Tom, *NX6E* **email:** nx6e@hotmail.com
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Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM Local Time/PST,
Repeater: WB6TCS - RX 147.210, TX 147.810, Offset +0.6 MHz, CTCSS/Tone PL100 Hz

Please note: Repeater: N6MNV UHF 442.700 Mhz, Offset +5MHz, CTCSS/Tone PL 173.8 Hz in South San Francisco is cross linked every Monday Night Net at 9 p.m. to WB6TCS 2 meter repeater.

The CARC Monday night net is the best way to find out the latest club news. All check-ins are welcome.

Message from the President: George Chong, *W6BUR*

Hello CARC Members and Friends;

Many thanks to Mr. Denis L. Moore – WB6TCS for the use of his repeater for our CARC Monday Night Net.

Happy Chinese New Year Message

This year February 5, 2019 will be Chinese New Year.

To all our CARC members and friends, I wish you all a very Happy Chinese New Year.

Chinese New Year Feb 5, 2019 is the **Year of the Boar,** which begins on Tuesday, February 5, 2019.

If you were born in 1923, 1935, 1947, 1959, 1971, 1983, 1995, 2007, and 2019 you are an Earth Boar person according to the Chinese Calendar.

Folks born in the year of the Boar have a beautiful gentle personality and are blessed with good fortune in life along with happiness in life. They attract a lot of support in both work and life.

The best mates for those born in the year of the Boar are: Tiger, Rabbit, and Goat. The Tiger can provide the emotional security while the Rabbit is attracted to the intelligence and warmth, the Goat has many interests in common. https://chinesenewyear.net/zodiac/pig/

For the time being, the CARC Chinese New Year Celebration luncheon has been placed on hold. The reason for this departure from our normal event is that our hosting restaurant: Kome is closed for the next 3 or more months. The Kome management staff informed us that the closure was remodeling. However according to the news media, it may be related to thief to employee wages, see news article: https://www.sfchronicle.com/food/article/Bay-Area-restaurant-cited-for-wage-theft-shuts-13536453.php

Other Asian buffet restaurants in the vicinity were just way too expensive, issues with parking and did not have the size requirements (semi-private area) that we need for our luncheon and raffle.

We will keep you posted once the issues with Kome restaurant has been resolved or a suitable replacement restaurant can be found. Thank you for your patience with this matter.

Tech Article Introduction

Fast Radio Burst (FRB) are transient radio pulses/flashes from distant galaxies that are billions of light years away and are tracked by Radio Astronomers. Very sensitive

detectors pick up signal strengths that extremely weak after traveling the billions of light years from the source. The study of Fast Radio Bursts radio signals is a relatively new branch of radio astronomy. The very first Fast Radio Burst was determined to have been recorded back in July 24, 2001 at the Parkes radio dish in Australia.

Unlike Pulsars, the origins of the Fast Radio Burst (FRB) are unknown at this time and are of short duration. A second repeating source of FRB has been recently detected originating some 1.5 Billion light years away. Please read the Tech Article for additional information.

Additional Thoughts

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

Chat sub s'em to all you CARC members! - George W6BUR.

Public Service Announcements

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:
http://www.arrl.org/find-an-amateur-radio-license-exam-session

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) was organized by the San Francisco Office of Emergency Services (OES) following the 1989 Loma Prieta Earthquake to support the communications needs of the City and County of San Francisco when responding to emergencies and special events.

The Auxiliary Communications Service holds General Meetings on the third Tuesday of each month at the San Francisco Emergency Operations Center, 1011 Turk Street (between Gough Street and Laguna Street), from 1900 hours to 2100 hours local time. All interested persons are welcome to attend.

The ACS Net begins at 1930 hours (7:30 p.m.) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills, practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in. ACS Members should perform Net Control duty on a regular basis. On the second Thursday of each month, the net will be conducted on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz, simplex.

For more information, please attend an ACS meeting or check in on a net, or call 415-558-2717.

Upcoming meetings: Tuesday 7pm, February 19, 2019
Tuesday 7pm, March 19, 2019
……. Tuesday 7pm, April 16, 2019

Gilbert Gin (KJ6HKD)

Free Disaster Preparedness Classes In Oakland:
http://www.oaklandnet.com/fire/core/index2.html

CORE is a free training program for individuals, neighborhood groups and community-based organizations in Oakland. The underlying premise is that a major disaster will overwhelm first responders, leaving many citizens on their own for the first 72 hours or longer after the emergency.

If you have questions about the recertification process, you may contact the CORE Coordinator at 510-238-6351 or core@oaklandnet.com.

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).

http://sf-fire.org/calendar-special-events

Upcoming events

February
7 NERT Quarterly
10 2MCM Ham Radio practice
17 NERT Training Day - Third Saturday
Featured Trainings:
Running a Command Post at the NERT Staging Area
NERT Communications Team (NCT) Introduction

March
2 Medical Reserve Corps (MRC) Point of Dispensing Training
9….2MCM Ham Radio practice
…..No RSVP needed. Meet at Spreckels Lake in Golden Gate Park at 10am
17…NERT Training Day - Third Saturday
…..Featured Trainings:
- Coordinators Corner - for Neighborhood Coordinators and those interested
- NERT Forms Fun - hands on included

- NERT Communications Team (NCT) continued training
20 …Psychological First Aid for NERT and MRC volunteers
RSVP to sffdnert@sfgov.org or call 415-970-2024 to register.

April
13 2MCM Ham Radio practice
No RSVP needed. Meet at Spreckels Lake in Golden Gate Park at 10am
20 NERT Citywide Drill, NERT graduates and victims needed
SAVE THE DATE!!

***SFFD DOT** is the Fire Department Division of Training. All participants walking, biking or driving **enter through the driveway gate on 19th St.** between Folsom and Shotwell. Parking is allowed along the back cinderblock wall.

Visit ***www.sfgov.org/sffdnert*** to learn more about the training, other locations, and register on line. Upcoming Special NERT Events.

San Francisco Police Department: Auxiliary Law Enforcement Response Team (ALERT)

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will first complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into an 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

SFPD ALERT Training

The next SFPD ALERT training class has been scheduled for Saturday June 1, 2019 and Saturday, September 28th. The class will be held at the San Francisco Police Academy, in the parking lot bungalow, from 8am-5pm (one hour lunch break) on Saturday.

** Class date indicated are only for new members who have not completed either SFFD NERT training or the SFPD Community Police Academy.

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register for a training class by contacting the ALERT Program Coordinator, Mark Hernandez, at sfpdalert@sfgov.org, or by telephone at 415-401-4615.

SFPD ALERT Practice/Training Drill

All active/trained ALERT members are asked to join us for our next training drill, scheduled for on 9:00 am – 1:00pm Saturday February 9, 2019. Details will be emailed to active ALERT members, prior to the date of the exercise. Participation is not required, but strongly encouraged.

For more information on the San Francisco Police Department ALERT Program, email us at sfpdalert@sfgov.org, or call Sergeant Mark Hernandez (SFPD, Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:
http://sf-police.org/index.aspx?page=4019

Tech Article

Canada's CHIME telescope detects second repeating fast radio burst

News: Detections of FRBs at low frequencies also provide a new clue to the astrophysical puzzle

Published: 9 Jan 2019

https://www.mcgill.ca/maxbellschool/channels/news/canadas-chime-telescope-detects-second-repeating-fast-radio-burst-292994

Canada's CHIME telescope detects second repeating fast radio burst (FRB)

A Canadian-led team of scientists has found the second repeating fast radio burst (FRB) ever recorded. FRBs are short bursts of radio waves coming from far outside our Milky Way galaxy. Scientists believe FRBs emanate from powerful astrophysical phenomena billions of light years away.

The discovery of the extragalactic signal is among the first, eagerly awaited results from the Canadian Hydrogen Intensity Mapping Experiment (CHIME), a revolutionary radio telescope inaugurated in late 2017 by a collaboration of scientists from the University of British Columbia, McGill University, University of Toronto, Perimeter Institute for Theoretical Physics, and the National Research Council of Canada.

In a resounding endorsement of the novel telescope's capabilities, the repeating FRB was one of a total of 13 bursts detected over a period of just three weeks during the summer of 2018, while CHIME was in its pre-commissioning phase and running at only a fraction of its full capacity. Additional bursts from the repeating FRB were detected in following weeks by the telescope, which is located in British Columbia's Okanagan Valley.

Discovery of second repeating FRB suggests more exist

Of the more than 60 FRBs observed to date, repeating bursts from a single source had been found only once before – a discovery made by the Arecibo radio telescope in Puerto Rico in 2015.

"Until now, there was only one known repeating FRB. Knowing that there is another suggests that there could be more out there. And with more repeaters and more sources available for study, we may be able to understand these cosmic puzzles—where they're from and what causes them," said Ingrid Stairs, a member of the CHIME team and an astrophysicist at UBC.

Before CHIME began to gather data, some scientists wondered if the range of radio frequencies the telescope had been designed to detect would be too low to pick up fast radio bursts. Most of the FRBs previously detected had been found at frequencies near 1400 MHz, well above the Canadian telescope's range of 400 MHz to 800 MHz.

The CHIME team's results – published January 9 in two papers in Nature and presented the same day at the American Astronomical Society meeting in Seattle – settled these doubts, with the majority of the 13 bursts being recorded well down to the lowest frequencies in CHIME's range. In some of the 13 cases, the signal at the lower end of the band was so bright that it seems likely other FRBs will be detected at frequencies even lower than CHIME's minimum of 400 MHz.

FRB sources likely to be in 'special places' within galaxies

The majority of the 13 FRBs detected showed signs of "scattering," a phenomenon that reveals information about the environment surrounding a source of radio waves. The amount of scattering observed by the CHIME team led them to conclude that the sources of FRBs are powerful astrophysical objects more likely to be in locations with special characteristics.

"That could mean in some sort of dense clump like a supernova remnant," says team member Cherry Ng, an astronomer at the University of Toronto. "Or near the central black hole in a galaxy. But it has to be in some special place to give us all the scattering that we see."

A new clue to the puzzle

Ever since FRBs were first detected, scientists have been piecing together the signals' observed characteristics to come up with models that might explain the sources of the mysterious bursts and provide some idea of the environments in which they occur. The detection by CHIME of FRBs at lower frequencies means some of these theories will need to be reconsidered.

“Whatever the source of these radio waves is, it’s interesting to see how wide a range of frequencies it can produce. There are some models where intrinsically the source can’t produce anything below a certain frequency,” says team member Arun Naidu of McGill University.

“[We now know] the sources can produce low-frequency radio waves and those low-frequency waves can escape their environment, and are not too scattered to be detected by the time they reach the Earth. That tells us something about the environments and the sources. We haven’t solved the problem, but it’s several more pieces in the puzzle,” says Tom Landecker, a CHIME team member from the National Research Council of Canada.

About CHIME

CHIME is a revolutionary new telescope, designed and built by Canadian astronomers. “CHIME reconstructs the image of the overhead sky by processing the radio signals recorded by thousands of antennas with a large signal processing system,” explains Perimeter Institute’s Kendrick Smith. “CHIME’s signal processing system is the largest of any telescope on Earth, allowing it to search huge regions of the sky simultaneously."

CHIME is a collaboration of over 50 scientists led by the University of British Columbia, McGill University, University of Toronto, Perimeter Institute, and the National Research Council of Canada (NRC). The $16-million investment for CHIME was provided by the Canada Foundation for Innovation and the governments of British Columbia, Ontario and Quebec, with additional funding from the Dunlap Institute for Astronomy and Astrophysics, the Natural Sciences and Engineering Research Council and the Canadian Institute for Advanced Research. The telescope is located in the mountains of British Columbia’s Okanagan Valley at the NRC’s Dominion Radio Astrophysical Observatory near Penticton. CHIME is an official Square Kilometre Array (SKA) pathfinder facility.

To read the papers:

“Observations of fast radio bursts at frequencies down to 400 megahertz,” CHIME FRB Collaboration, *Nature*, published online Jan. 9, 2019. http://dx.doi.org/10.1038/s41586-018-0867-7
“The source of a second repeating fast radio burst,” CHIME FRB Collaboration, *Nature*, published online Jan. 9, 2019. http://dx.doi.org/10.1038/s41586-018-0864-x

(PHOTO: The CHIME telescope incorporates four 100-metre long U-shaped cylinders of metal mesh that resemble snowboard half-pipes, with total area equivalent to five hockey rinks. CHIME reconstructs the image of the overhead sky by processing the radio signals recorded by over a thousand antennas. Its signal processing system is the largest of any telescope on Earth, allowing it to search huge regions of the sky simultaneously. (Credit: CHIME)

Video on fast radio bursts, when the telescope was inaugurated in 2017.

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